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# WIPP Bulletin

*Spring 1994*

*No. 1*

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## Note from the Director

As Director of the Office of Radiation and Indoor Air (ORIA), I am pleased to introduce the Environmental Protection Agency's (EPA) newest WIPP public outreach effort, the "EPA WIPP Bulletin." This bulletin is a small part of a much larger effort we have initiated to keep the public informed and involved in our WIPP oversight program.

As many of you know, EPA became a very significant player in the Waste Isolation Pilot Plant (WIPP) program when Congress enacted the WIPP Land Withdrawal Act in October 1992. The Act requires EPA to certify compliance with its radioactive waste standards before the Department of Energy (DOE) can begin disposal of any radioactive waste at WIPP. EPA welcomes the challenges and opportunities posed by our new statutory responsibilities. We see one of our greatest challenges as effectively involving the public in our decisionmaking processes on the WIPP. To meet that challenge, we recognize that we must constantly listen to you and learn about how we can communicate more effectively.

In December 1992, we held public meetings in New Mexico to introduce our Agency and to explain our responsibilities under the newly-enacted law. We asked many New Mexicans about their concerns and about how to keep them informed and involved. Since then, we have pursued many of their suggestions. A few of these include making technical exchange meetings open to the public, setting up a toll-free WIPP Information

Line, and establishing dockets in New Mexico.

EPA will continue to keep the public informed and involved, as much as possible, in regulatory decisions and processes. As we implement our regulatory responsibilities, we are continuing to develop our public outreach program efforts and to affirm our commitment to open communications and public involvement.

Margo T. Oge  
Director, ORIA

## "No Surprises!"

Eighteen months ago, EPA was given oversight authority for many of DOE's proposed radioactive waste activities at the WIPP. We believe that, in order to fulfill our responsibilities to the best of our ability, it is important for us to establish and maintain open communications with DOE. This need became evident to both agencies when DOE submitted its Test Phase and Retrieval Plans and supporting documentation to EPA for review. EPA found the application to be incomplete.

To minimize the possibility of future surprises, DOE is sending EPA a copy of its draft certification application in order to provide us with an opportunity to review it and identify any problems or weaknesses early on. EPA and DOE are also conducting technical exchange meetings on WIPP-related scientific and technical issues. The public is welcome to attend and observe these meetings. DOE is now allowing EPA staff access to pertinent computer codes,

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data, and systems information that was previously denied.

We feel strongly that open and timely discussions of the many complex issues associated with evaluating the WIPP site is the most efficient and fair means of carrying out our oversight responsibilities. This approach should eliminate surprises for everyone involved, including EPA and DOE.

J. William Gunter  
Director  
Criteria and Standards Division

### **EPA's Changing WIPP**

EPA's activities and focus regarding the WIPP changed dramatically in October 1993 when DOE announced its decision to conduct all tests using radioactive wastes at its laboratories rather than at the WIPP facility. DOE's policy change has allowed us to shift our efforts to other responsibilities under the WIPP Land Withdrawal Act of 1992. For the next few years, EPA's efforts will focus on: (1) issuing regulations specifying criteria DOE must satisfy to demonstrate compliance with EPA's radioactive waste disposal standards; (2) providing guidance and ensuring compliance with the Resource Conservation and Recovery Act (RCRA) and other applicable laws and regulations; and (3) reviewing DOE's performance assessments, plans for laboratory tests, and draft compliance certification applications.

#### ***The Disposal Standards***

In December 1993, EPA issued final amendments to its radioactive waste disposal standards. In order for DOE to dispose of radioactive waste at the facility, they must demonstrate that the WIPP can comply with these standards. EPA plans to propose its compliance criteria in the Summer of 1994. The criteria will elaborate on what constitutes compliance with the standards and will address many issues. Some of the most critical issues concern waste characterization, consideration of human intrusion, reducing uncertainties associated with long-term compliance, engineered barriers, and public participation. It is important to know what is in the waste potentially destined for disposal at the WIPP in order to predict how the WIPP will perform. Determining the impacts of human intrusion is one of the most significant factors in assessing whether the WIPP will comply. DOE must demonstrate that any releases of radionuclides from the WIPP will not exceed EPA's standards. The compliance criteria will also address the public's role in EPA's compliance certification process.

#### ***Experimental Program Plan***

In January 1994, EPA received a copy of DOE's Experimental Program Plan which contains descriptions of all experiments that DOE is performing at its laboratories and at WIPP (Note: The tests at WIPP will not involve radioactive waste.) The experiments will help DOE learn more about the performance of the WIPP facility. EPA has reviewed the plan to identify data gaps and to assure that all needed information will be provided in the final plan. EPA provided comments to DOE on April 29, 1994. Copies of the comments are

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available in the EPA dockets or can be obtained by calling the Agency at (202) 233-9360. They are also available on an electronic bulletin board which is part of the Technology Transfer Network (discussed at the end of this bulletin).

### ***Review of WIPP Performance Assessments***

EPA has completed a preliminary review of the first three out of five volumes of DOE's 1992 preliminary performance assessment for the WIPP. The performance assessments are an important building block for DOE's compliance application, because they contain information projecting the WIPP facility's performance over the next 10,000 years. EPA's review enables both DOE and EPA to prepare for the actual compliance certification review process. EPA staff gain valuable experience, and DOE receives an early indication of areas requiring additional research and information. EPA's comments to DOE cover the format and content of the assessments, the conceptual and computer models, regulatory issues, the use of expert panels, quality assurance, and access to information. Copies of the comments are available in the EPA dockets, on the Technology Transfer Network, and by calling the Agency at (202) 233-9360. In the future, EPA will meet with DOE to discuss the format and content of future performance assessments. These meetings will be open to the public and will be announced on EPA's toll-free WIPP Information Line, 1-800-331-WIPP (9477).

### ***Quality Assurance Plans***

EPA will rely on a large amount of data to determine whether the WIPP complies with the radioactive waste disposal standards and other environmental standards. To help ensure that this data is accurate, EPA is establishing quality assurance criteria as part of the compliance criteria. The Agency is also developing its own program for verifying the accuracy of the data, which will include assessing the adequacy of DOE waste characterization procedures. EPA staff are reviewing DOE's quality assurance procedures and will participate in DOE's visits to audit the laboratories' data. The week of February 21, EPA staff visited Sandia National Laboratories to assess data and quality assurance procedures. From March 2-4, they visited the WIPP facility.

### ***1994 Schedule Updates***

#### **Compliance Criteria**

##### Summer 1994

- \* EPA plans to issue the proposed Compliance Criteria rule.

##### 40 - 50 days later

- \* EPA plans to hold hearings in New Mexico on the proposed Compliance Criteria.

##### 90 days later

- \* The Compliance Criteria comment period closes.

##### Approximately 120 days later

- \* EPA plans to hold National Advisory Council for Environmental Policy and Technology meetings and workshops to

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discuss compliance criteria  
issues for the final rulemaking.

1 year later

- \* EPA plans to issue the final Compliance Criteria rule.

### **Performance Assessments**

March 1993

- \* EPA received volumes 1-3 of the "December 1992" performance assessment.

November 1993

- \* EPA received volumes 4 and 5.

January 1994

- \* EPA submitted its first set of comments to DOE on volumes 1-3.

August 1994

- \* EPA plans to provide comments on volumes 4 and 5 as well as additional comments on volumes 1-3.

Spring 1995

- \* DOE plans to submit a draft compliance package, including the performance assessments, to EPA.

### **Review of the Experimental Program Plan**

April 1994

- \* EPA provided DOE with preliminary comments on their Experimental Program Plan.

### **Assuring Compliance with Other Environmental Laws**

October 1994

- \* DOE must submit to EPA's Region 6 its first documentation package demonstrating the WIPP's compliance with all applicable environmental statutes and regulations. (Note: The WIPP Land Withdrawal Act requires EPA to make a determination of compliance within 6 months.)

### **Docket Locations**

The "Rulemaking Docket" is a collection of documents that is the basis for EPA rulemaking actions. The following are the locations of the dockets containing information about EPA's WIPP-related rulemakings.

### **WASHINGTON, DC**

U.S. EPA  
Air Docket (LE-131)  
Waterside Mall, Rm. M1500  
401 M St., SW  
Washington, DC 20460  
(202) 260-7548  
Hrs.: M-F, 8:30am-12noon, 1:30pm-3:30pm

### **NEW MEXICO**

General Library  
General Publications Dept.  
University of New Mexico  
Albuquerque, NM 87131-1466  
Hrs.: M-Th, 8am-9pm; F, 8am-5pm; Sat-S,

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1pm-9pm

Carlsbad Public Library

101 S. Halegueno

Carlsbad, NM 88220

Hrs.: M-Th, 10am-9pm; F-Sat, 10am-6pm;  
S, 1pm-5pm

Fogelson Library

College of Santa Fe

1600 St. Michaels Dr.

Santa Fe, NM 87501-5634

Hrs.: M-Th, 8am-12midnight; F, 8am-5pm;  
Sat, 9am-5pm; S, 1pm-9pm

### **Radioactive Waste:**

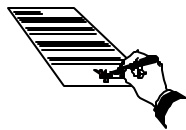
Docket No. R-89-01 (40 CFR Parts 144 & 191)

**WIPP:** Docket No. A-92-56, Compliance Criteria (40 CFR Part 194); Docket No. A-92-57, Test Plan & Retrieval Plan Review; Docket No. A-93-02, Compliance Determination.

### **Questions to the Editor**

#### **What is transuranic waste?**

Transuranic waste mostly originates from nuclear weapons production facilities for defense programs. It includes items such as rags, tools, residues, and laboratory equipment contaminated with radioactive materials. The most prevalent radioactive element is plutonium. Transuranic waste can remain radioactive for



thousands of years. Ninety-seven percent of the volume of waste proposed for disposal at the WIPP is contact-handled waste. It does not require special shielding, however, it poses a danger when inhaled or ingested and should remain enclosed and contained. The remaining three percent is remote-handled transuranic waste. Though the volume is small, it is expected to account for approximately one-third of the total radioactivity of the disposed materials. It emits high levels of penetrating radiation and requires protective shielding.

#### **How will EPA ensure that DOE's data is accurate?**

EPA has a three-part program for ensuring data accuracy. The first part is establishing quality assurance and quality control requirements. The second part is using inspections, spot checks, and audits to verify that DOE is following proper data acquisition procedures. The third part is that EPA is developing WIPP specific guidance for qualification of existing data utilizing input from our technical advisory groups.

#### **How does EPA feel about the viability of WIPP as a disposal facility?**

EPA has no preconceived position on the viability of the WIPP. EPA will evaluate DOE's compliance application and decide whether the WIPP will comply with the radioactive waste disposal standards and EPA's compliance criteria.

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**If you have questions that  
you would like to have  
answered in the next  
Bulletin, please write to:**



Editor  
EPA WIPP Bulletin  
Office of Radiation and Indoor Air  
U.S. EPA  
401 M St., SW (6602J)  
Washington, DC 20460

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### **The Office of Solid Waste**

The WIPP is often referred to as a potential repository for radioactive waste. This characterization is true, but tells only part of the story; much of the waste potentially destined for disposal at the WIPP contains non-radioactive hazardous materials as well. This combination is called "mixed waste." Since the waste designated for the WIPP contains hazardous as well as radioactive components, the WIPP must comply with hazardous waste disposal regulations as well as regulations that apply to the disposal of radioactive waste. In fact, the WIPP will not open for waste disposal unless these standards are met. EPA's Office of Radiation and Indoor Air is in charge of ensuring that the WIPP will meet the standards governing the disposal of radioactive waste. EPA's Office of Solid Waste (OSW) and the State of New Mexico's Department of the Environment will determine

whether the WIPP will meet the standards for disposal of hazardous waste. This article discusses OSW's role.

### Land Disposal Requirements

Under OSW regulations and the Resource Conservation and Recovery Act (RCRA), disposal of hazardous waste (including underground disposal) is prohibited unless the waste is treated so that it meets the "best demonstrated available technology" standards developed by OSW. An alternative exists, however. Hazardous waste may be disposed of into or on the ground if it is shown, to a reasonable degree of certainty, that the waste will not migrate (move) from the potential disposal unit at more than pre-determined levels for 10,000 yrs.

The Department of Energy (DOE), which manages the WIPP, plans to seek approval to dispose of the mixed waste under this alternative. Therefore, DOE will submit a "No-Migration Petition" to OSW. The petition is expected to include data and computer-generated projections that DOE believes support its assertion that hazardous waste will not migrate from the WIPP above pre-determined concentration levels for 10,000 years. DOE plans to submit the draft petition in the spring of 1995. The EPA and DOE will discuss a schedule for issuing a proposed rule granting or denying a variance.

In reviewing the petition, OSW will request and consider public input on OSW's proposed decision on the petition. If OSW approves the petition and makes a No-Migration Determination, EPA's Region 6 office, which is

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located in Dallas, will enforce the Determination's conditions.

#### For More Information

For updates on OSW's efforts in regulating the WIPP under RCRA and/or fact sheets and other public information materials, contact Chris Rhyne, at (703) 308-8658. General information about upcoming OSW actions is available from the WIPP Information Line, 1-800-331-WIPP.

#### **Results of the September NACEPT WIPP Review Subcommittee Meeting**



The WIPP Review Subcommittee of the National Advisory Council for Environmental Policy and Technology

(NACEPT) is a Federal advisory committee that provides EPA with independent advice and counsel on some of the difficult policy and technical issues related to implementation of the WIPP Land Withdrawal Act. Committee members are experts from academic institutions, state government, environmental groups, industry, and nonprofit organizations. They have held two meetings so far.

The Subcommittee most recently met in Albuquerque, New Mexico in September of 1993 to discuss WIPP compliance criteria issues. The WIPP Land Withdrawal Act requires EPA to develop these criteria to assess whether the

WIPP will comply with EPA's standards for the disposal of radioactive waste.

EPA posed the following three questions for the Subcommittee's consideration. Background information and the Subcommittee's responses are summarized below.

**1) To reduce uncertainty in compliance assessment, should EPA specify certain future states assumptions? If so, what aspects of the future should EPA address and how?**

DOE will use computer models to demonstrate the WIPP's compliance with the regulatory requirements. The models must estimate radioactive releases over a period of 10,000 years. The assumptions used in the models can have large, associated uncertainties depending on the chosen definition of the future in terms of human physiology, the state of science and technology, demographics, etc. In developing compliance criteria, EPA can develop a speculative view of the future, or EPA can assume that future states are the same as today which reduces the uncertainty in the modeling process.

The NACEPT Subcommittee reviewed this issue and stated that: 1) the proposed criteria should include assumptions about the future states of human physiology, science, and technology; and 2) such assumptions should be based as much as possible on today's conditions.

**2) To reduce uncertainty in compliance**

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**assessment, should EPA specify certain assumptions related to human intrusion? If so, what aspects of human intrusion should EPA address and how?**

Human intrusion into geologic repositories is one of the most likely scenarios for the release of radioactivity at the WIPP. In this scenario, someone would inadvertently intrude into the waste repository while drilling for resources (e.g., oil or gas). The Subcommittee recommended assuming that future drilling rates will be the same as they are today.

**3) Should EPA address the use of engineered barriers at the WIPP? If so, why and how?**

Because of uncertainties involved in predicting the ability of a repository to contain radioactive waste for 10,000 years, the radioactive waste disposal standards incorporate seven qualitative requirements to provide added assurance that radioactive wastes will be contained. These assurance requirements are designed to improve a disposal system's ability to isolate radionuclides from the environment. They require the use of natural and engineered barriers to promote waste containment. A barrier may be a geologic structure, a canister, or a waste form designed to decrease the mobility of radioactive materials.

The Subcommittee recommended that the Agency require in the proposed criteria an analysis of the costs and benefits of using particular engineered barriers. Some of the issues that may be considered in such an analysis are: worker exposure to radiation, transportation

risks, long- and short-term health benefits, and the ability to mitigate the consequences of human intrusion.

The EPA compliance criteria work group received these recommendations in September and is currently considering them in its development of proposed compliance criteria. The EPA expects to issue the proposed criteria this summer. Issuance of the final criteria is planned for the summer of 1995.

EPA plans to hold another NACEPT Subcommittee meeting after publication of the proposed compliance criteria. The meeting will be announced on the WIPP Information Line, 1-800-331-WIPP. The public will be invited to attend.



### **EPA's WIPP Information Line**

#### **1-800-331-WIPP**

Up-to-date recorded information about hearings, meetings, publications, and other important EPA activities which involve the Waste Isolation Pilot Plant.

**Callers now have the options of:** hearing the recorded information in Spanish, leaving a recorded request to be added to the WIPP Mailing List or to receive a publication, and leaving a question for a member of the staff to answer.

**ORIA-LV's WIPP Role**



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The Office of Radiation and Indoor Air-Las Vegas (ORIA-LV) laboratory supports EPA in carrying out its WIPP responsibilities in several technical areas. ORIA-LV leads the Agency's activities in the areas of transuranic (TRU) waste characterization and quality assurance. The laboratory also provides technical assistance and support to EPA's Region 6 Office in the areas of compliance inspections and audits and environmental monitoring.

The Las Vegas laboratory staff manages EPA's review of DOE's waste characterization and quality assurance programs aimed at the development of certification protocols in these areas. The basic approach used by the lab for the WIPP project is to conduct in-depth, fact-finding site visits, inspections, and audits at pertinent DOE facilities. This will allow the staff to gain familiarity with DOE's programs, to identify key issues of concern, to advise and involve EPA Headquarters, and to convey EPA concerns to DOE. This is consistent with the EPA strategy for certification mentioned in the previous article entitled, "No Surprises!"

In 1993, ORIA-LV personnel visited many of DOE's largest waste generator sites for the purpose of obtaining firsthand knowledge of each site's waste characterization program and their associated quality assurance programs for managing and storing TRU waste. The sites were: Idaho National Engineering Laboratory, Rocky Flats Plant, Oak Ridge National Laboratory, Los Alamos National Laboratory, Hanford Reservation, and Savannah River Plant. ORIA-LV personnel are also reviewing DOE and DOE-contractor quality assurance program documentation to assess completeness and

compliance with acceptable standards.

ORIA-LV will continue to monitor the development of DOE's waste characterization and quality assurance programs and will participate as observers of DOE's efforts to qualify old data produced prior to enactment of the WIPP Land Withdrawal Act. Much of this old data will be used to support DOE's Performance Assessment and, as such, is directly tied to compliance issues. These observations will provide an independent evaluation of the soundness of the DOE's approach to old data qualification and will be used as the basis for development of EPA's data qualification and validation protocols. As part of EPA's evaluation, ORIA-LV personnel will select several key data sets, conduct independent assessments on these data sets, and compare DOE results with EPA results.

Additional information on these and other ORIA-LV WIPP activities will appear in upcoming issues of EPA's WIPP Bulletin.

### **The Role of EPA's Dallas Office**

EPA's Region 6 Office in Dallas, Texas, in cooperation with New Mexico's Department of the Environment is responsible for assuring that the WIPP facility complies with applicable federal environmental laws and regulations including hazardous waste regulations promulgated under the Resource Conservation and Recovery Act (RCRA).

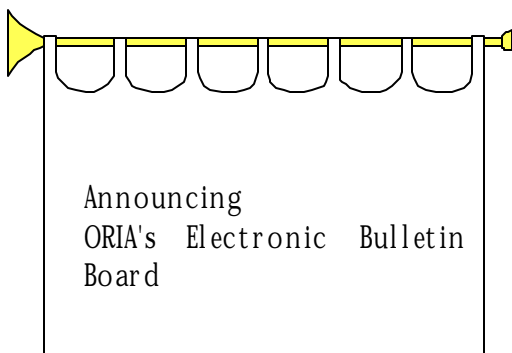
Under the WIPP Land Withdrawal Act, DOE is required to submit documentation to EPA every two years demonstrating WIPP's

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compliance with all applicable federal environmental laws and regulations. The first submission must be made by October 31, 1994. Region 6 will be conducting the technical review and evaluation of that submission. The office will also make a recommendation on the compliance determination to the EPA Administrator.

Region 6 is planning inspections and audits to verify environmental compliance at the WIPP. The office will also provide guidance to DOE on environmental monitoring issues associated with demonstrating compliance with all environmental regulations that are applicable at WIPP.

Region 6 staff also continue to work closely with EPA Headquarters staff in Washington, DC, assisting with public outreach and communications; providing technical support in a variety of areas; and conducting technical review and evaluation of various WIPP-related documents.



The Office of Radiation and Indoor Air (ORIA) is now displaying information on an electronic bulletin board which is part of the Technology Transfer Network (TTN) managed by EPA's Office of Air Quality Planning and

Standards (OAQPS). The ORIA portion of the bulletin board contains useful documents about EPA's activities under the Waste Isolation Pilot Plant Land Withdrawal Act. Access to the network is free except for the cost of using the phone.

To use this service you must:

- \* Have a modem and communications software on your computer.
- \* Set the following parameters on your communications software:

Data Bits:	8
Parity:	N
Stop Bits:	1
Terminal Emulation:	VT100 or VT/ANSI
Duplex:	FULL

- \* Call the network using your communications software. The number is (919) 541-5742. This applies to a 1200, 2400, 9600, or 14.4K bps modem.

You can also access the bulletin board through the Internet through TELNET [ttnbbs.rtpnc.epa.gov](mailto:ttnbbs.rtpnc.epa.gov).

The service can be used 24 hours a day, 7 days a week except Monday morning 8-12 ET, when the system is down for maintenance and backup.

If you need help accessing the system, call the help desk at (919) 541-5384 in Research

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Triangle Park, North Carolina during business  
hours, 1-5 ET.

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